

WE CLAIM:

1. Apparatus for verifying honest gaming transactions over a communications network, comprising:
  - 5 a host processor for generating a game seed, said host processor receiving a game input from the satellite processor and generating a game result based on said game input, said game seed, and predetermined game rules; said host processor sending said game seed and said game result to said satellite processor, and
  - 10 a satellite processor for providing the game input to said host processor over the communications network, for receiving the game seed and the game result from the host processor, and for verifying the honesty of the transaction by (i) generating a game result based on the game input, the game seed, and the predetermined game rules, and (ii) comparing the generated game result with the received game result.
2. Apparatus according to Claim 1, wherein said satellite processor provides a satellite random number that the said host processor uses to generate the game seed.
- 20 3. Apparatus according to Claim 1, wherein said host processor generates a host random number that the said host processor uses to generate the game seed.
- 25 4. Apparatus according to Claim 3, wherein said host processor generates a host transform from said host random number, and provides said host transform to the said satellite processor.
- 30 5. Apparatus according to Claim 4, wherein said host processor provides said host random number to said satellite processor, said satellite processor using said host random number and said host transform to

confirm that said host transform was generated from the provided host random number.

5 6. Apparatus according to Claim 5, wherein said satellite processor generates said game seed from said host random number.

7. Apparatus according to Claim 4, wherein said host processor calculates said host transform from an irreversible transform of said host random number.

10 8. Apparatus for creation of a collaborative random output over a communications network, comprising:  
a host processor for generating a host random number, said host processor receiving a satellite random number from a satellite processor and generating a collaborative random output based on said satellite random number and said host random number; and  
15 a satellite processor for generating the satellite random number, and for providing said satellite random number to said host processor over the communications network.

20 9. Apparatus according to Claim 8, wherein said host processor uses said collaborative random output to generate a game seed.

25 10. Apparatus according to Claim 8, wherein said host processor provides said host random number to said satellite processor over the communications network, and wherein said satellite processor uses said satellite random number and said host random number to verify said collaborative random output.

30 11. Apparatus according to Claim 8, wherein said host processor generates a host transform from said host random number and provides the host transform to said satellite processor over the communications network,

and wherein said satellite processor uses said host transform and said host random number to verify said host random number.

5 12. Apparatus according to Claim 11, wherein said host processor calculates said host transform from an irreversible transform of said host random number.

13. Apparatus for verifying transactions over a communications network, comprising:

a first processor for:

10 (i) receiving a second processor input transform from a second processor over the communications network;

(ii) generating an arbitrary game input;

15 (iii) computing a first processor input transform from said arbitrary game input;

(iv) communicating said first processor input transform to the second processor over the communications network;

20 (v) after (i) and (iv), communicating said arbitrary game input to the second processor over the communications network;

(vi) receiving an arbitrary game input from the second processor over the communications network;

25 (vii) after (vi), comparing said second processor input transform with the arbitrary game input received in (vi); and

a second processor for:

30 (i) receiving the first processor input transform from the first processor over the communications network;

(ii) generating a second arbitrary game input;

35 (iii) computing the second processor input transform from said arbitrary decision input;

(iv) communicating said second processor input transform to the first processor over the communications network;

5 (v) after (i) and (iv), communicating  
said second arbitrary game input to the first processor  
over the communications network;

(vi) receiving the arbitrary decision input from the first processor over the communications network;

10 (vii) after (vi), comparing said first processor input transform with the arbitrary decision input received in (vi).

14. Apparatus according to Claim 13, wherein said first processor input transform or said second processor input transform is based on an irreversible transform of said decision input.

15 processor input transform is based on an irreversible transform of said decision input.

15. Apparatus for verifying honest gaming transactions over a communications network, comprising:

20 (i) receiving an arbitrary game input from each of two satellite processors over the communications network;

25 (ii) communicating data corresponding to the arbitrary game input for each satellite processor to the other satellite processor;

(iii) producing a game result using the arbitrary game inputs from the two satellite processors and predetermined game rules;

30 (iv) providing the game result to the satellite processors over the communications network; and

(v) after (iv), providing all of the arbitrary game inputs to each of the satellite processors over the communications network; and

35 two satellite processors, each for:

(i) determining an arbitrary game input;

(ii) providing the arbitrary game input to the host processor over the communications network;

(iii) receiving the data corresponding to the arbitrary game input of the other satellite processor;

5 (iv) receiving the game result from the host processor over the communications network;

(v) storing the game result;

(vi) receiving the other satellite processor's game input from the host processor over the communications network;

10 (vii) storing the other satellite processor's game input; and

(viii) verifying the gaming transaction by

15 (a) generating a game result from the other satellite processor's arbitrary game input, the stored arbitrary game input, and the stored predetermined game rules, and (b) comparing the generated game result with the stored game result.

16. Apparatus according to Claim 15, wherein the host processor additionally:

20 receives data generated from the game inputs of each said satellite processor;

25 forwards the said generated data from each said satellite processor to the other satellite processor over the communications network; and

each satellite processor additionally

(i) provides said host processor with data generated from said game input;

(ii) receives said generated data from the game input from the other satellite processor;

30 (iii) after receiving said game input from the other satellite processor, computes the data corresponding to said game input, the output being called computed data;

35 (iv) after (iii), comparing the computed data from said game input and the previously received data corresponding to the said game input.

17. Apparatus according to Claim 15, wherein said data corresponding to said decision input is calculated from an irreversible transform of said decision input.

5 18. Apparatus according to Claim 15, wherein the host processor computes the data corresponding to the arbitrary decision input for each satellite processor.

10 19. A storage medium for storing a program for causing one or more computers to verify honest gaming transactions over a communications network by causing:

the satellite processor to provide a random number to the host processor;

the host processor to generate a game seed based on the received random number;

the satellite processor to provide a game 15 input to said host processor;

the host processor to generate a game result based on the game input, the game seed, and predetermined game rules;

the satellite processor to receive data 20 corresponding to the game seed and the game result from the host processor; and

the satellite processor to verify the honesty 25 of the transaction by (i) generating a game result based on the game input, the data corresponding to the game seed, and the predetermined game rules, and (ii) comparing the generated game result with the received game result.

